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*Military Pay Gaps  
and Caps*

*James R. Hosek, Christine E. Peterson,  
Joanna Zorn Heilbrunn*

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## Preface

This research was prompted by the Clinton Administration proposal last spring that military pay growth be capped below civilian wage growth from 1994 to 1997. The proposal sought to reduce defense budget outlays and control growth in the federal deficit. In addition to those goals, two factors may have added to the apparent attractiveness of military pay caps. First, because the defense drawdown reduces the demand for military personnel, some argue that military pay itself can decline without damaging the nation's capability to meet its future military manning requirements. Second, lending support to the position that military pay can slip downward relative to civilian pay without harm, it is widely perceived that military pay has fallen relative to civilian pay steadily since 1982, but that recruiting and retention problems did not arise during the 10 years following 1982. Although the pay cap proposal was ultimately not enacted, it nonetheless raises issues that remain salient because of the continuing interest in curbing defense spending and the deficit.

The present research critiques the perspective that proposed caps on military pay growth pose little risk to the strength and quality of the active duty enlisted force. Building on previous research (James R. Hosek, Christine E. Peterson, Jeannette Van Winkle, and Hui Wang, *A Civilian Wage Index for Defense Manpower*, R-4190-FMP, RAND, 1992), the authors reconsider the size of the existing military/civilian pay gap, dispel the perception that military/civilian pay fell during the 1980s yet recruiting and retention were unaffected, and caution against the Administration's program of pay caps unless selective offsets in the form of expanded enlistment and reenlistment bonuses and supplemental educational benefits are put in place.

This work should be of interest to the defense manpower policy community and, more generally, to civil sector and private sector leaders who rely upon broad wage indexes for guidance in determining annual pay adjustments. The research was conducted for the Assistant Secretary of Defense for Personnel and Readiness and undertaken within the Defense Manpower Research Center, part of RAND's National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense and the Joint Staff.

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## Summary

This report investigates the military/civilian pay gap and its implications for capping military pay increases. The pay gap is defined as the percentage difference in military versus civilian pay growth as measured from a given starting point. The index currently used to measure civilian pay growth is the Employment Cost Index (ECI), which reflects pay growth in the civilian labor force at large. We instead recommend measuring civilian pay growth for the subset of civilian workers whose composition by age, education, occupation, gender, and race/ethnicity represents that of active duty military personnel. We do so via the Defense Employment Cost Index (DECI), which we constructed previously and have updated to include fiscal 1992. We compare pay gaps based on the ECI versus the DECI and present DECI-based pay gaps for officer and enlisted personnel by gender and seniority and for occupational and age categories. We then consider the implications of these pay gaps for capping military pay.

ECI- and DECI-based pay gaps are similar in the early years of our comparison and reveal a serious gap by the late 1970s. The large military pay increases taking effect in fiscal 1981 and 1982 closed this gap. From fiscal 1992 onward the ECI- and DECI-based pay gaps diverge. The ECI shows an ever-widening pay gap through the 1980s, reaching 11.7 percent by fiscal 1992 from a fiscal 1982 base point—that is, military pay grew 11.7 percent *slower* than civilian pay as measured by the ECI. However, unlike the situation in the late 1970s, the Services did not experience recruiting and retention problems. As a result, the ECI-based pay gap suggested that military pay had become unimportant to meeting personnel quality and quantity goals.

In sharp contrast, the DECI shows essentially no pay gap during the 1980s for young enlisted personnel and a comparatively small pay gap for older enlisted personnel. Further, relative to fiscal 1982, the fiscal 1992 DECI-based pay gap reached only 0.1 percent overall (including officers)—essentially, the relationship of military pay to civilian pay was the same as that in fiscal 1982. Further, recruit quality and retention showed a positive relationship with the DECI-based military/civilian pay gap, suggesting that pay has been a major determinant of that *relationship*, a point consistent with detailed analyses of enlistment and retention.

Because of the apparent responsiveness of enlisted recruit quality and retention to military pay, the DECI's lesson for pay caps is that while a one-year freeze might do little damage, a sustained slippage amounting to perhaps 9 percent by 1997, as based on the projected civilian growth rate of 14 percent versus the 5 percent proposed rate for military pay over the period, could do real harm. The accession and retention problems of the late 1970s, i.e., before the big military pay hikes in fiscal 1981 and 1982, are the best testament to this.

Although the overall pay gap for fiscal 1992 was negligible at 0.1 percent, the DECI reveals how pay gaps varied across groups. During the 1980s, civilian wages relevant to junior enlisted men actually grew slower than military pay, while military and civilian pay grew at about the same rate for senior enlisted men. Civilian pay relevant to officers grew significantly faster than military pay, resulting by fiscal 1992 in a gap of 16.1 percent for junior male officers and 10.9 percent for senior male officers.

For women in the military, the rapid wage rate increases achieved by their civilian counterparts during the 1980s had created a 7 percent pay gap for enlisted women by fiscal 1992 and a gap three times that size for female officers.

These large negative gaps for officers and women may not necessarily reflect poor *absolute* pay comparability, since the pay gaps reflect military/civilian pay growth differentials from a base point and not wage levels at that point or currently. It is possible that military pay levels still exceed the pay levels of their civilian counterparts; this can be determined through a separate study.

The DECI pay gap estimates indicate that sustained caps on military pay could significantly damage recruitment and retention. To some degree that damage could be mitigated by selectively applied bonuses and supplemental educational benefits for enlisted men and women. We therefore suggest that a program of pay caps, if enacted, be accompanied by the authority and resources to increase the amount and scope of bonuses and benefits rapidly (within a fiscal year). That may require increased appropriations and/or specific authority to shift funds from other accounts for which funds have been appropriated.

For officers the situation is less clear. Their retention was virtually unaffected by the pay gaps that opened during the 1980s. Possible explanations for this unresponsiveness include: officers have a long-term career commitment; many junior officers incur obligations to serve a number of years of service and are not at liberty to leave; many senior officers with over 10 years of service are drawn forward by retirement benefits receivable after 20 years of service; officers may have expected their compensation to be restored to comparable civilian levels in a matter of time; and officer pay levels may have been greater than civilian levels,

though with the rapid growth in civilian pay they are now nearer parity. An added gap resulting from pay caps could affect future officer retention by changing these relationships; therefore the situation should be monitored closely.

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We would like to thank Captain Mary Humphreys-Sprague (USN), the former Director of the Office of Compensation Policy, Office of the Secretary of Defense, for supporting the original analyses on which this report is based. We are grateful to Saul Pleeter, also at the Office of Compensation Policy, for his valuable comments. We appreciate the contributions of our RAND colleagues Bruce Orvis, who provided a careful and thoughtful review; Beth Asch, who gave us numerous comments along the way; and Deborah Wesley, for helping to update the Defense Employment Cost Index series.

## 1. Introduction

In spring 1993, the Clinton Administration proposed capping future increases in military pay. Military pay growth would be zero in fiscal 1994 and in 1995–1997 would be held to 1.5 percentage points below the Employment Cost Index (ECI), the index used in setting military pay increases. With this proposal, the Administration projected a 2 percent military pay increase for 1995, 1.7 percent for 1996, and 1.6 percent for 1997.<sup>1</sup> If civilian wage movement kept pace with the projected cost of living, the Administration proposal would have created a decline in relative military pay on the order of 9 percent from fiscal 1994 to 1997.<sup>2</sup> This illustrates the possibility that four years of caps producing annual increases of 2 percent or less would lead to a substantial erosion of military pay. Although the pay freeze in fiscal 1994 was not enacted, the President's budget still called for pay increases limited to 1.5 percentage points below the ECI for at least the next five years. Those conditions result in a decline in military pay on the order of 7 percent (as opposed to 9 percent). The basic issue is whether the military could withstand such a decline in pay without material damage to morale, cohesion, commitment, and quality. The answer depends to some extent on the starting point, i.e., the current relationship of military pay to civilian wages. But the *existing* military pay gap is estimated at 11.7 percent, a number already large enough for concern. The continuance of pay caps of ECI minus 1.5 percentage points would widen the gap to over 18 percent, according to current methods of estimation, by 1997.

This report challenges the relevance of the military/civilian pay gap estimate as it is currently measured. We present an alternative, detailed assessment of the pay gap and then consider the implications for capping military pay. Our pay gap assessment extends and updates previous RAND research that developed a new index for measuring civilian wage growth, the DECI (Defense Employment Cost Index).<sup>3</sup> In contrast, the civilian wage index now used for tracking civilian wage growth is the ECI. The ECI follows wage growth for civilian workers at large, whereas the DECI tracks wage growth for people who are similar to those on active duty. In Section 2, we describe the indexes, present pay gaps based on

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<sup>1</sup>*Army Times*, April 5, 1993, p. 3.

<sup>2</sup>Projected civilian wage growth from 1994–1997 is  $1.035 \times 1.035 \times 1.032 \times 1.031 = 1.14$ .

Projected military pay growth would be  $1.0 \times 1.02 \times 1.017 \times 1.016 = 1.05$ .

<sup>3</sup>Hosek et al., 1992.

the ECI versus the DECI, and present DECI-based pay gaps for junior and senior, male and female officer and enlisted personnel, and by occupational categories and age categories. In Section 3, we discuss the implications of these findings for the Administration's proposed pay cap policy.

## 2. Pay Gap Comparisons

### The ECI and the DECI

The ECI is a fixed-base weight index constructed by the Bureau of Labor Statistics for the purpose of measuring employment cost growth in civilian occupations. The fixed-base weights hold the mix of workers by industry and occupation constant, and the employment cost data show how much the cost of a fixed bundle of labor increases over time. Base weights come from the Census, represent approximately 90 percent of the civilian labor force (self-employed are excluded), and are updated every 10 years or so with data from the decennial Census. Employment cost data come from a quarterly sample of private and public sector establishments and include both wage and salary cost and benefit ("fringe") cost. Several ECI series exist, and military/civilian pay comparisons are based on the ECI for private sector wage and salary workers. The other ECI series, e.g., by industry group and by occupation group, all move similarly to that ECI.

The DECI is a variable-base weight index constructed to measure civilian wage growth for people comparable to those currently on active duty. Weights change from year to year in accord with changes in the makeup of active duty personnel. Weight data come from active duty personnel records maintained by the Defense Manpower Data Center (DMDC). Weights in a given year represent that year's active duty military personnel with respect to age, education, occupation, gender, and ethnicity.<sup>1</sup> The civilian wage data for corresponding age, education, occupation, gender, and ethnicity come from the Current Population Survey (CPS).<sup>2</sup> The DECI is built as follows: Using weights for year t and wages for

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<sup>1</sup>The five-way DECIs presented in this report are similar to the three-way DECIs (age, education, and occupation) reported in Hosek et al., 1992. Appendix A in this report illustrates the differences in the pay gaps generated between the five-way and three-way DECIs. While some differences exist between the two DECIs, their overall patterns are the same. The main differences appear when pay gaps by gender or ethnicity are computed. The five-way DECI provides an accurate presentation of the differential in wage growth between civilian and military gender/ethnic subpopulations. When nongender/nonethnic breakdowns are used, the five-way and three-way DECIs do not differ markedly; because the majority of military personnel are male and nonblack/non-Hispanic, the individual gender/ethnic differences are swamped by the majority's wage growth patterns.

<sup>2</sup>Wage data are drawn from the March CPS, which asks respondents about wage and salary earnings and weeks of work in the previous year. The DECI wage data are limited to full-time (35 or more hours per week), full-year (35 or more weeks per year) workers without health conditions limiting their amount or kind of work and who are not institutionalized.

years  $t$  and  $t + 1$ , we compute an annual DECI for the  $t$  to  $t + 1$  interval. We then link the annual DECIs together to construct the entire index.

The percentage change in the DECI from one year to the next indicates the percentage increase in military pay needed to keep pace on average with the civilian wage growth of people like those currently on active duty. The emphasis on people like those on active duty is crucial. Compared with the general civilian work force, active duty personnel are younger and more likely to have completed at least a high school education (including those with Certificates of General Education Development [GED]); their occupational grouping differs to some extent (even after accounting for combat specialties for which there are few civilian counterparts); they are primarily male; and they are more likely to be black and less likely to be Hispanic. These differences matter because civilian wage changes are not the same for every group but can—and do—differ by age, education, occupation, gender, and ethnicity. The DECI controls for all five of these characteristics, but the ECI controls only for occupation.<sup>3</sup>

The DECI approach also provides the flexibility to compute wage indexes for particular groups within the active duty force. This is possible for combinations of the defining variables (age, education, occupation, gender, ethnicity) and for other variables included in the DMDC data, namely, years of service (YOS), officer versus enlisted, and service branch.

### **Three Guidelines for Pay Gap Comparisons**

Below we present three guidelines on which the pay gap comparisons done by DoD, the Services, and thus this report are based. These guidelines help explain what the subsequent pay gap figures represent.

1. Pay gap comparisons are actually comparisons of *relative pay growth* as measured from a given base point. They are not comparisons of absolute pay levels. On one hand, absolute comparisons must be done periodically to assess pay comparability but are difficult and expensive. On the other, relative pay growth comparisons do a good job of measuring the extent of divergence in military and civilian pay over time from a base point, and they are easy to do. There is no claim that the levels of military and civilian pay are equal at base point. If pay levels are equal at the base point, the divergence in pay growth reflects differences in absolute levels; if military

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<sup>3</sup>That is, ECI data are collected by occupation category, but occupation mix is not adjusted to that found in the military.

pay levels are unequal to civilian levels at the base point, the divergence indicates whether the differential in levels is shrinking or widening.

2. Fiscal 1982 is the base point for pay gap computation. Following severe recruiting and retention problems that had come to a head in fiscal 1979–1980, military pay increases taking effect at the beginning of fiscal 1981 and 1982 were intended to restore military/civilian pay to the overall relationship prevailing in 1972 at the outset of the all-volunteer force. The increases in military pay were designed to return military pay in fiscal 1982 to the same relative position with respect to civilian pay that existed in 1972; the basic pay adjustment implemented in 1972 was thought adequate by the Gates Commission to achieve comparability with civilian pay and make the volunteer force viable. Thus the comparability reestablished by the fiscal 1981 and 1982 increases did not specifically mean that the *levels* of military and civilian pay, on average, were equal in 1972 or fiscal 1982, only that the “viable” relationship between military and civilian pay was reestablished, i.e., comparability but not necessarily parity. The combined 1981–1982 increases raised military pay by 25 percent and quelled the recruiting and retention problems. The improvements in recruit quality and retention that followed in the next few years substantiate the notion that 1982 was a watershed in military compensation.
3. Although pay gap comparisons do not encompass all elements of compensation, they do cover the major portion. In pay gap comparisons military pay is represented by basic pay and tracked by a Basic Pay Index (BPI).<sup>4</sup> Basic pay accounts for about two-thirds of current pay for active duty personnel. Basic Allowance for Subsistence (BAS) and Basic Allowance for Quarters (BAQ) account for perhaps another 20 percent on average, with the remainder in the form of Variable Housing Allowance (VHA), bonuses, and special pays. (Health care has typically not been counted in compensation though a health insurance premium could be imputed.) Basic pay, BAS, and BAQ have a history of moving together and, over the past 10 years, have been in virtual lockstep (i.e., the basic pay increase has been applied to BAS and BAQ as well, so nearly 90 percent of military compensation increased at the basic pay rate). Since 1982, the percentage increases in basic pay, BAS, and BAQ equaled one another in all but one year. Therefore, the increase in BPI has essentially equaled the increase in these regular cash components of current military compensation. Civilian pay is represented by wages and salaries to put civilian wage growth on the same basis as military pay. Omitted are benefits such as Social Security, health insurance, retirement

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<sup>4</sup>The BPI is constructed from the authorized basic pay increases as established by Congress.

benefit contributions, unemployment insurance, workers' compensation, life and accident insurance, and paid vacation. During the 1980s the cost of these benefits rose more rapidly than wages and salaries, with Social Security, health costs, and ERISA spurring the increase. Nevertheless, wages and salaries remain the major component—over 80 percent—of civilian pay.<sup>5</sup>

The above guidelines illustrate that the military/civilian pay gap used by the DoD actually represents relative wage growth differentials—not absolute pay differentials. Pay gaps based on relative wage growth are useful indicators of military/civilian pay trends, especially because they are easy to compute relative to determining the relevant absolute pay differentials, but they should not be used in isolation. Because the pay gap focuses on relative growth, pay gap comparisons should be accompanied by periodic, detailed assessments of military and civilian compensation to ensure that military pay levels and benefits are not becoming significantly out of line from their civilian counterparts. Further, numerous studies have shown that accessions and retention are positively related to military pay (among other factors); thus, an examination of accession and retention quality, as well as rates, could be used to help evaluate the actual nature of pay comparability.

## Overall Pay Gap: ECI Versus DECI

Figure 1 shows the military/civilian pay gap during fiscal 1977–1992.<sup>6</sup> The gap is computed as  $[(BPI - ECI)/BPI] \times 100$ , i.e., it is the percentage difference in the Basic Pay Index and the Employment Cost Index. Note that the pay gap is zero in the base period (1982) because both indexes are set to values of 100 then. The figure shows the by now well-known erosion of military pay since 1982, ending in a gap of 11.7 percent in 1992—i.e., military pay rose 11.7 percent less than civilian pay over that period. We also see the sharp decline in relative pay occurring in the late 1970s, and because that was a known time of worsening recruiting and retention, the ECI-based pay gap appears reliable. Given that result, there should have been recruiting and retention problems in the late 1980s as well, when the pay gap was even larger than in the late 1970s.

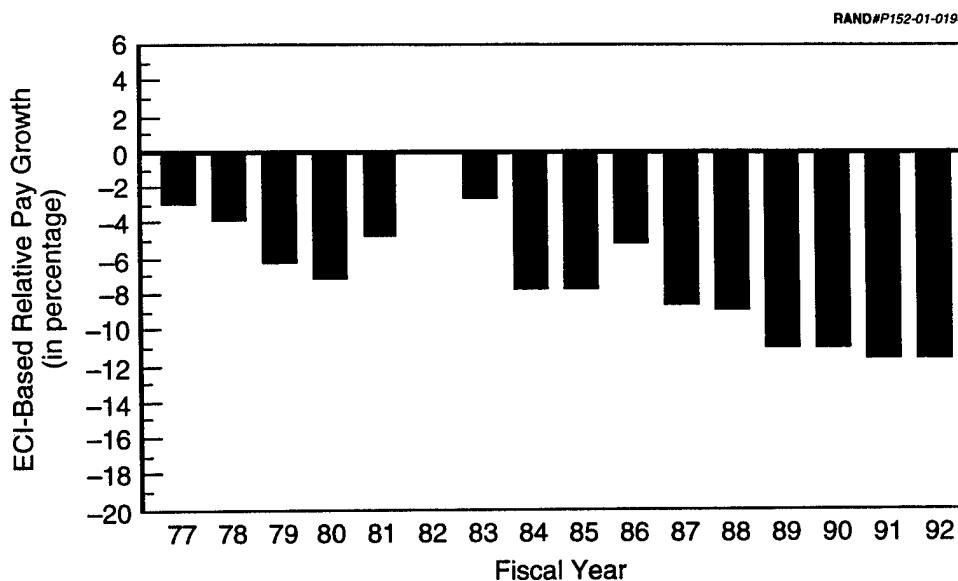
We addressed this paradox in earlier work<sup>7</sup> and believe it arises from the inappropriateness of the ECI as a yardstick of civilian wage change for the

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<sup>5</sup>Moreover, increases in the *costs* of these benefits do not necessarily have the same value to an employee as an equal dollar increase in wage or salary. If not, then benefit cost growth overstates their value growth as perceived by the worker.

<sup>6</sup>All years are fiscal years unless otherwise noted.

<sup>7</sup>Hosek et al., 1992.



NOTE: Relative pay growth =  $[(BPI - ECI)/BPI] \times 100$ .

**Figure 1—From 1982 to 1992 BPI Rose 11.7 Percent Less than ECI**

military. Figure 2 shows the military/civilian pay gap based on the DECI, an index that we believe is more appropriate because it reflects wage change for civilian workers who are comparable to persons in the military.

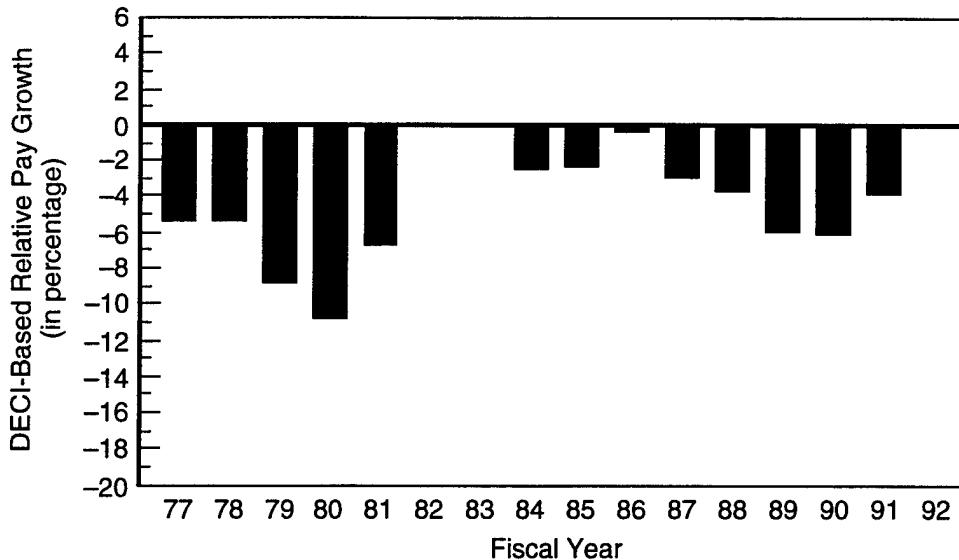
DECI-based pay gaps actually parallel those of the ECI in the early years of our comparison, revealing a serious gap in the late 1970s. But the DECI and ECI part company after 1982. The DECI pay gap was under 4 percent until 1988, edged to 6 percent in 1989–1990, and has fallen since. In particular, the 1992 DECI-based pay gap was 0.1 percent (Figure 2)—essentially no gap compared with the 11.7 percent ECI-based pay gap. (In Figure 2, the 0.1 percent gap is indistinguishable from the x-axis.)

An appropriate civilian wage index, when used to construct a military/civilian pay ratio, should show a positive relationship between that ratio and recruit quality,<sup>8</sup> first-term retention, and second-term retention<sup>9</sup>—but the ECI shows a

<sup>8</sup>Because recruiting goals (i.e., the number of enlistees) are almost always met, the real emphasis is on the quality mix of those recruits.

<sup>9</sup>Numerous studies over the past 20 years have shown the positive relationship between relative pay and accessions, and relative pay and retention. While relative pay growth may not be the best measure of relative pay compared with, say, relative pay levels (an empirical question), it still depicts the general trend in relative pay—a widening gap implies widening differentials.

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NOTE: Relative pay growth =  $[(BPI - DECI)/BPI] \times 100$ .

**Figure 2—From 1982 to 1992 BPI Rose Nearly the Same as DECI**

*negative relationship.* By comparison, DECI-based military/civilian pay ratios show a close correspondence between improvements in military/civilian pay and improvements in those measures.<sup>10</sup> Given the different purposes for which the ECI and DECI were designed and the DECI's ability to track recruiting and retention, it is not surprising that their pay gap estimates could differ substantially.

## Many Kinds of Gaps Exist

With the ECI or its predecessor, the PATC (Professional, Administrative, Technical, Clerical Index), the approach to measuring the pay gap was unitary: "The" civilian wage index (the ECI or the PATC) was compared with the BPI. Unfortunately, this approach encourages the false idea that a basic pay increase that keeps pace with a civilian wage index is equally good for all. That is not the case—and because civilian pay grows differently for different groups, it has been necessary to restructure pay more than once. Pay studies by the Gates Commission before the all-volunteer force detected the need for a substantial increase in enlisted pay in the entry grades. These studies anticipated a possible problem and induced legislative action to prevent its occurrence. Another

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<sup>10</sup>These points are illustrated graphically in Appendix B.

restructuring occurred in 1981 when higher basic pay increases went to senior, higher ranking personnel. In that case, action came after the “hemorrhage” of these key personnel; the problem had either gone undetected or required a crisis before being fixed.

A single gap would make sense if there were single best indexes for military and civilian pay. From the military perspective, it is possible to defend the BPI as the best index because increases in basic pay are almost always applied across-the-board. The BPI really shows how much a person’s basic pay will rise, holding constant rank and year of service. Of course, there are qualifiers: Compensation growth also depends on promotions, step (or longevity) increases, and other factors (VHA, bonuses, benefits, special pays). If these underlying factors remain about the same, then the change in basic pay is an accurate measure of the change in overall compensation.<sup>11</sup>

The case for a single civilian wage index is one of maintaining simplicity, transparency, and a sense of equity in the military pay adjustment process. However, these useful goals ignore the economic reality of different labor markets for different skills and experience. Even the overall DECI, which accurately reflects the average civilian wage growth that military personnel would expect if they were civilian workers, misses differential wage growth by group. Yet such knowledge is needed to maintain pay comparability.<sup>12</sup> Assessments of pay gaps by group can provide forewarnings of where structural adjustments in basic pay might be necessary or where bonuses should be placed.

### *Pay Gaps for Enlisted Personnel and Officers*

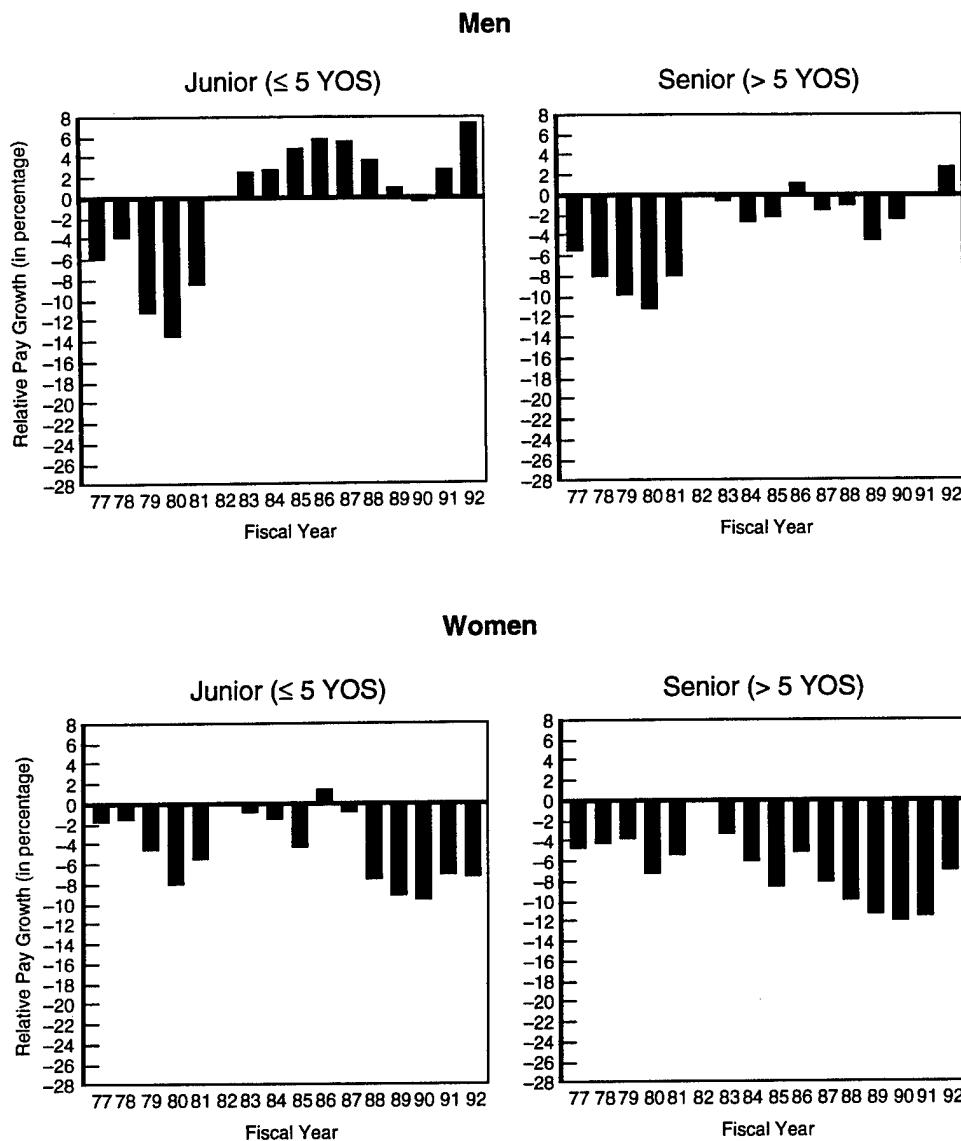
Figures 3 and 4 show DECI-based pay gaps for enlisted personnel with only high school educations and for officers with college educations. These personnel compose most of the active duty force. Virtually all officers have college educations, and 90 percent of enlisted personnel have only high school educations. Each figure has four panels that group personnel by gender and junior or senior status. “Junior” means five or fewer YOS (for officers, commissioned YOS) and “senior” means over five YOS. Nearly 50 percent of the enlisted force and about one-quarter of the officer force are junior. These

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<sup>11</sup>Or alternatively, if an underlying factor changes but in a known way, one still obtains a good sense of the change in military compensation, though it would be less accurate. A 10 percent drop in promotion rates would detract from the value of a 4 percent basic pay increase.

<sup>12</sup>Differential civilian wage growth means that the principle of pay comparability will at times override the principle of equity, here meaning the same percentage increase in basic pay for all.

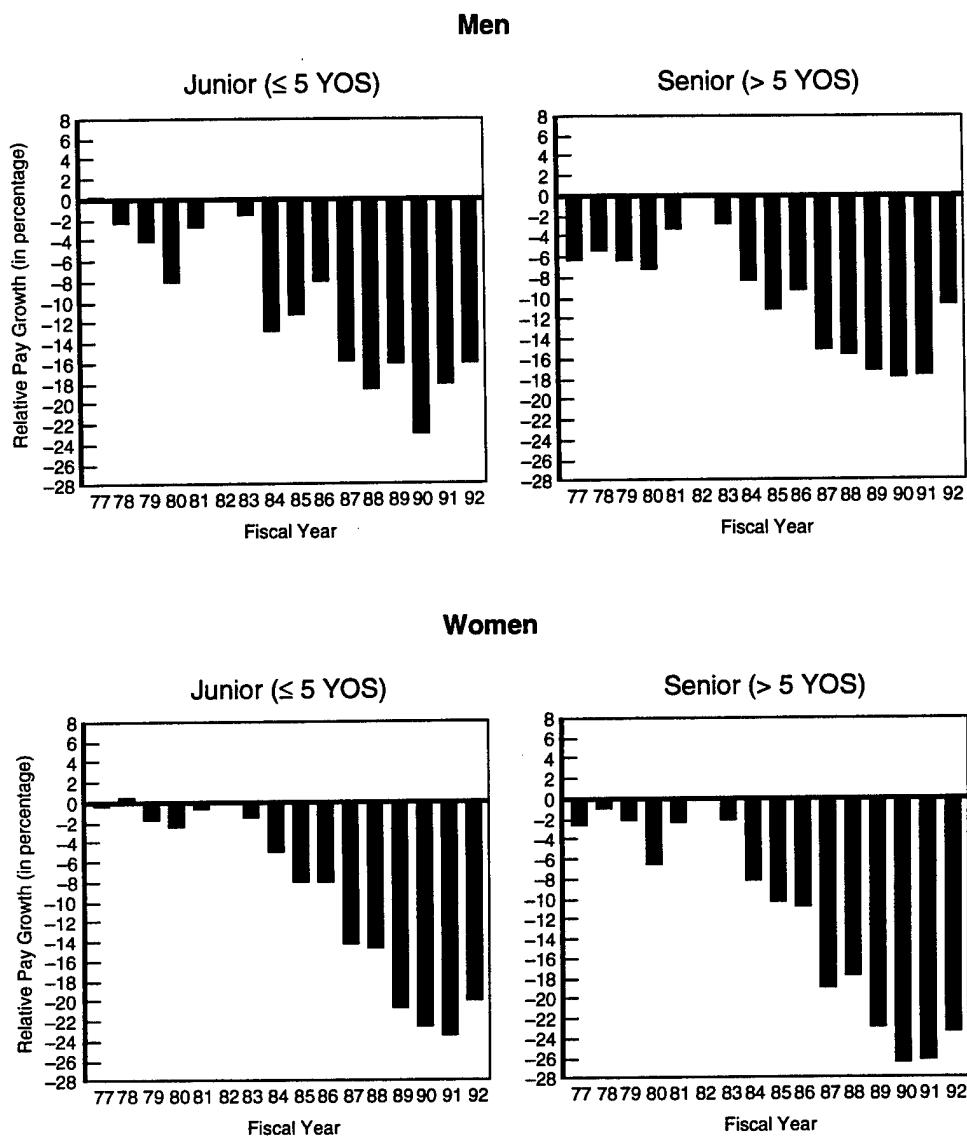
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NOTE: Relative Pay Growth =  $[(BPI - DECI)/BPI] \times 100$ .

**Figure 3—DECI-Based Pay Gaps for Enlisted Personnel with High School Diplomas, by Gender and Seniority**

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NOTE: Relative Pay Growth =  $[(\text{BPI} - \text{DECI})/\text{BPI}] \times 100$ .

**Figure 4—DECI-Based Pay Gaps for Officers with Some College or a Degree, by Gender and Seniority**

percentages have fallen some over the past 15 years. Women compose about 11 percent of the enlisted force and 12 percent of the officer force. Between 1980 and 1992, the percentage of women in the enlisted force grew by one-third (from 8.6 to 11.3 percent), and among officers, the percentage of women increased by two-thirds (from 7.4 to 12.2 percent).

In 1992 there was no pay gap for junior enlisted men with a high school education (Figure 3). In fact, from 1982–1992, basic pay increases matched civilian wage increases fairly well, at first being nearly equal, moving 4–5 percent ahead in 1986–1988, declining to essentially zero in 1989–1990, then rebounding to 7 percent ahead in 1992.<sup>13</sup> Though not shown, the pattern for enlisted men without high school educations is similar.

Senior enlisted men with high school educations fared somewhat less well during the 1980s. Civilian wage growth at first outpaced basic pay, causing a gap of 2.5–3 percent in 1984–1985, followed by a return to approximate parity in 1986. From there a gap of over 4 percent emerged in 1989, but it reversed to eliminate the pay gap and result in a greater relative growth for basic pay of +2.7 percent in 1992. The relatively faster growth of basic pay in 1992 can be attributed to the economic recession, which retarded the civilian wage increase.<sup>14</sup>

The pattern of relative wage growth for junior and senior enlisted women with high school educations differs substantially from that for men. Junior enlisted women experienced a small gap in 1983–1984, thereafter a steady decline to 9–10 percent in 1989–1990, and a slight closing to 7.4 percent in 1992. The relative pay decline for senior enlisted women was similar but worse. Their gap grew from 1982 onward, reaching the 12 percent range in 1989–1991, but subsiding to 7.2 percent in 1992.

The larger pay gaps for women than men seen over the 1982–1992 period result from the gradual rise in women's civilian wages relative to those of men.

Women are catching up with men in the civilian sector, particularly in the young age categories that relate to the active duty population.<sup>15</sup> It should be noted that the large pay gap for women does not necessarily imply a competitive disadvantage for women in the military because their base pay *levels* may well

<sup>13</sup>Remember that all of these percentages indicate relative pay growth from the base point, 1982 = 100.

<sup>14</sup>Appendix B presents the trend in civilian wage levels using the wages for a civilian population comparable to that in the military.

<sup>15</sup>For instance, Smith and Ward, 1989, pp. 9–23, find that working women aged 20–24 earned 78 percent as much as men in 1980 and 86 percent as much by 1986, whereas the wages of all working women were 60 percent of men's in 1980 and 65 percent in 1986.

exceed their counterpart civilian pay levels, although that differential decreases as the gap in wage growth increases. If and by how much women's military pay levels exceed women's civilian pay levels are empirical questions deserving further investigation.

Similarly, the somewhat larger pay gaps for senior personnel than junior personnel result from the rapid advance of civilian wages for experienced workers. Wages of less experienced workers have been held back by a combination of effects including the infusion of baby boom cohorts into the labor force, continuing increases in the labor force participation of women, and the internationalization of the low-skill labor market.

Figure 4 reveals large pay gaps for officers. For all categories of officers—men and women, junior and senior—military pay rose far less rapidly than civilian pay since 1982. Pay gaps reached their worst point for junior officers in 1990: For both men and women, basic pay had risen a full 23 percent slower than civilian pay. Thanks to the recession, this gap closed to 16 percent for men in 1992, but to only 20 percent for women. The decline was a bit less steep for senior male officers and showed less year-to-year variability (than for junior male officers) from 1987 to 1991. Their gap reached 18 percent in 1990 and closed to 11 percent in 1992. The decline for senior women was most extreme: A gap of over 25 percent developed in 1990–1991, dropping to 23 percent in 1992.

Given that basic pay for officers rose the same as basic pay for enlisted personnel, officer pay gaps must be seen as the consequence of the rapid increase in civilian earnings for college educated persons witnessed throughout the 1980s and only now abating. This effect was compounded for women as their civilian wages rose relative to those of men.

Surprisingly, despite the large decline in relative pay, officer recruiting and retention did not deteriorate during this period. Possible explanations for the stable recruiting and retention include: officers have a long-term career commitment, *esprit de corps*, and patriotism; many junior officers incur obligations to serve a number of years and are not at liberty to leave, and many senior officers with over 10 YOS are drawn forward by retirement benefits receivable after 20 YOS; officers have felt confident that their compensation would be restored to comparable civilian levels in a matter of time; and officer pay may have been higher than civilian pay but, with the rapid growth in civilian pay, is now nearer parity. Determining the relative role of these explanations requires further research.

## *Pay Gaps by Occupation*

When first thinking about military/civilian pay comparisons, many people believe the proper approach should be occupation by occupation. Occupations can be difficult to define with precision, depending on factors such as training, certification, duties, experience, and responsibility. Given the need to take into account various defining dimensions, both Census and Current Population Survey data routinely contain as many as 300 three-digit occupations into which respondents can be categorized. For wage-growth comparisons these categories are too thin to support comparative analysis; therefore, both the ECI and the DECI aggregate occupations up to the one-digit level. However, the ECI occupation series ignores the potential separate effects of age, education, gender, and race/ethnicity. As a result, these series move much like the overall private sector ECI, and little wage trend information is lost by using the latter as opposed to the occupation ECIs themselves. This similarity does not hold for the DECI because it is sensitive to the age/education/gender/ethnic makeup of civilian workers in occupational categories. Occupation DECIs represent civilian wage trends for workers whose age, education, gender, and ethnic mix equals that of active duty personnel in comparable military occupation areas. Therefore, occupation DECIs reflect civilian wage movement relevant to the kind of people currently on active duty. The occupation DECIs merely disaggregate the overall DECI by occupation.

Figure 5 gives DECI-based pay gaps for six occupation categories: professional/technical, administrative, service, craft/production, operator/laborer, and other.<sup>16</sup> Officers are assumed to be professional or technical, and enlisted personnel are distributed among all the categories.

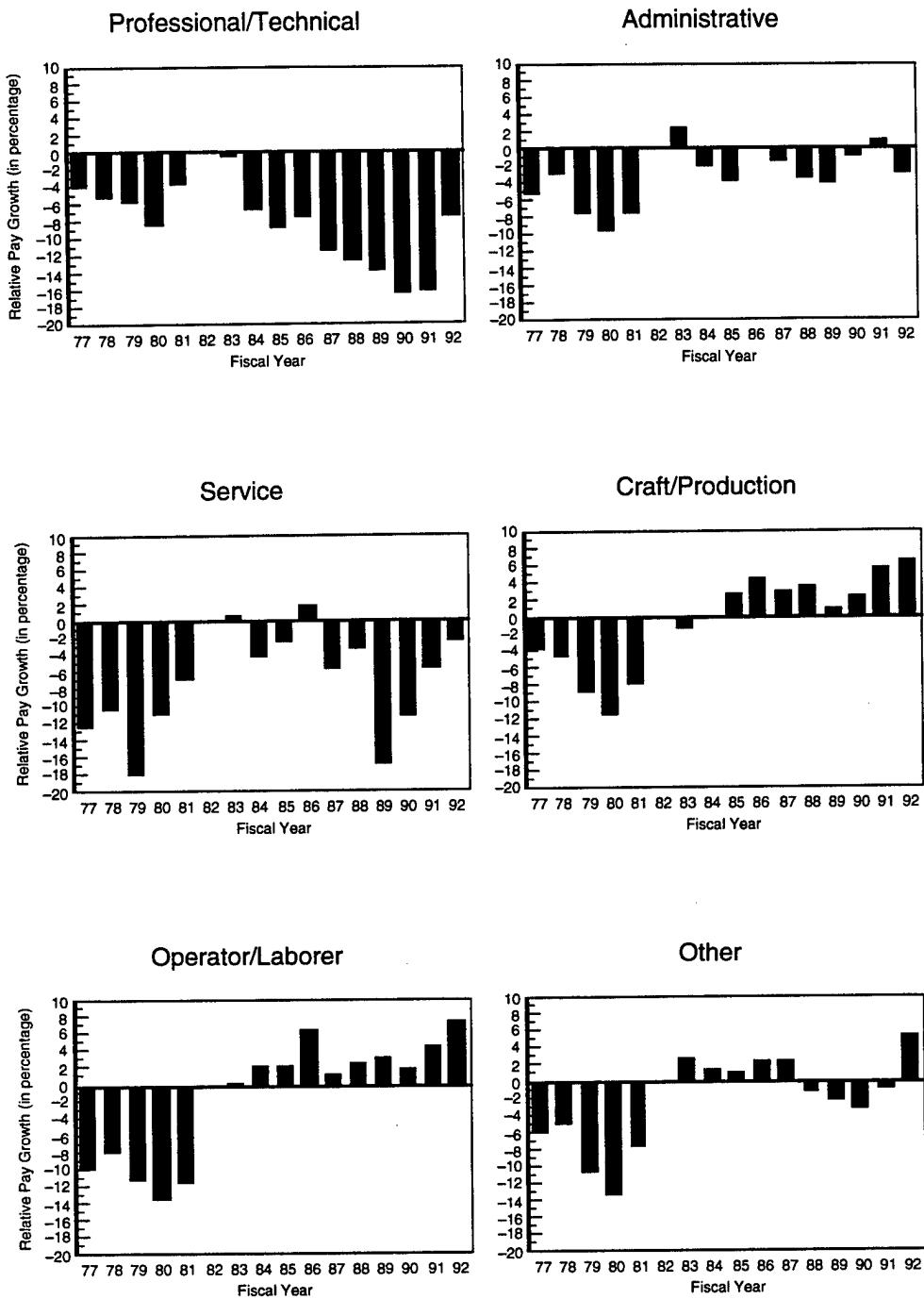
Broadly speaking, the underlying factors of age, education, gender, and ethnicity account for much of the wage movement within an occupation category and between occupational categories.<sup>17</sup> For instance, professional/technical pay gaps parallel those seen above for officers, with a decline from 1982 to 1990 of 16 percent and a significant rebound since. As mentioned, the officer pay gaps result from the rapid increase in civilian pay of college-educated workers. Administrative and service occupations also show pay gaps, though on the order of less than one-half those of professional/technical. Enlisted personnel (high school education) predominate in the occupational categories of craft/production

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<sup>16</sup>"Other" includes combat arms, which has no major civilian occupation correspondence. An average wage across civilian occupations is assigned to this category, in keeping with the view that when personnel leave combat arms for civilian jobs, they select civilian occupations at random, given their age and education.

<sup>17</sup>For further discussion, see Hosek et al., 1992, p. 63.

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NOTE: Relative Pay Growth =  $[(BPI - DECI)/BPI] \times 100$ .

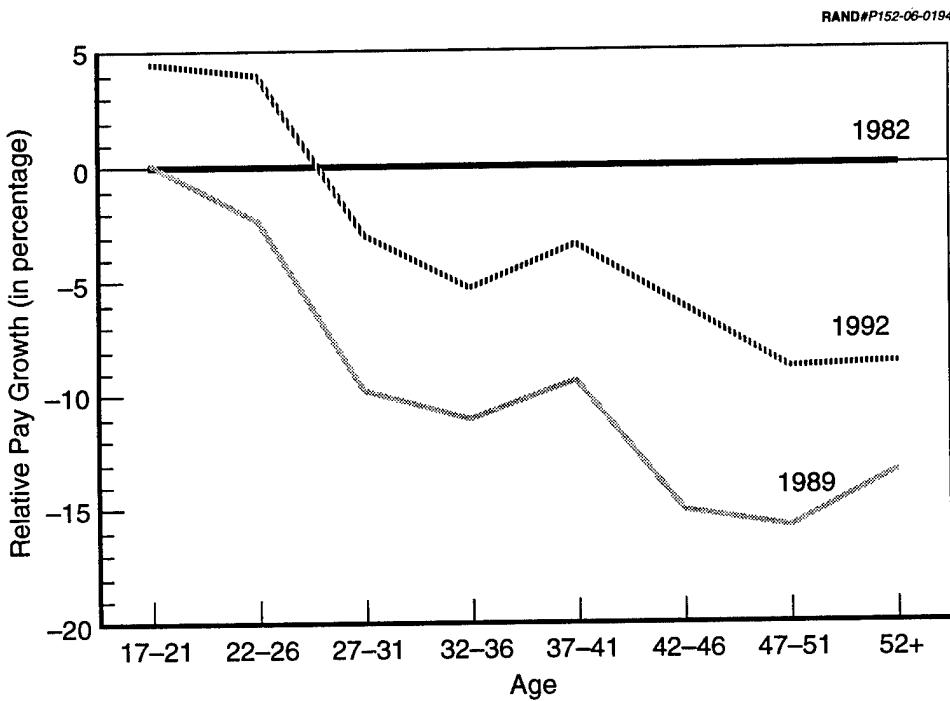
**Figure 5—Relative Pay Growth by Broad Occupation Groups**

and operator/laborer; these show no evidence of a pay gap during the period since 1982. The “other” category—representing combat arms and containing many young men with high school educations—has moved back and forth between gap and no gap (or to greater relative growth for basic pay), akin to the pattern for junior enlisted men.

### *Pay Gaps by Age Group*

Figure 6 draws attention to the rapid advance of civilian wages for more experienced workers. The figure displays pay gaps by age group for three years, 1982, 1989, and 1992. About one-half of the active duty force lies in the first two age groups—mostly first-term and early second-term enlisted personnel—while more senior enlisted personnel are spread throughout the older age groups. Officers are also more prevalent in the younger age groups, but on the whole are more evenly distributed across the groups. The line labeled 1982 represents the base year when all pay gaps are zero.

The downward slope of the 1989 and 1992 age gap lines indicates a systematic tilt toward faster civilian wage growth for older workers. The pay gap for



NOTE: Relative Pay Growth =  $[(BPI - DECI)/BPI] \times 100$ .

Figure 6—Since 1982, Pay Gaps Are Larger for Older Age Groups

those aged 47–51 is about 15 percentage points greater than for the youngest age group, in both 1989 and 1992, as compared with 10 percentage points greater for the age 32–36 group and 2 percentage points greater for the 22–26 age group. While the recession reduced the gaps experienced by all age groups, thus raising the 1992 line, the change was fairly uniform across age groups and amounted to a parallel upward shift in the age gap line (by about 6 to 7 percentage points or so), leaving the age tilt unaffected.

The tilt originates mostly from male enlisted personnel because they predominate in sheer numbers through all age cells. Figures 3 and 4 suggest the degree of the tilt may vary between men and women and between enlisted personnel and officers. Figure 3 indicates that male senior enlisted personnel had much faster civilian wage growth than male junior enlisted personnel, while female senior enlisted personnel ended up about the same as their junior counterparts. As seen in Figure 4, the reverse was true for male officers (civilian wages for junior officers rose faster than for senior officers). For senior versus junior female officers, the relationship parallels that seen for enlisted women where senior personnel had slightly faster civilian wage growth rates.

## Summary of Pay Gap Results

Below is a quick summary of the various pay gaps existing in fiscal 1992:

- The ECI-based pay gap was 11.7 percent.
- The DECI-based pay gap was 0.1 percent.
- DECI-based pay gaps for enlisted and officer personnel:
  - Enlisted junior, male, high school only: +7.3 percent (no gap)
  - Enlisted senior, male, high school only: +2.7 percent (no gap)
  - Enlisted junior, female, high school only: 7.4 percent
  - Enlisted senior, female, high school only: 7.2 percent
  - Officer junior, male, college: 16.1 percent
  - Officer senior, male, college: 10.9 percent
  - Officer junior, female, college: 20.0 percent
  - Officer senior, female, college: 23.4 percent.
- Pay gaps were mixed by occupation, though by far largest in the professional/technical category (which contains officers).
- For enlisted personnel, civilian pay grew about 6 to 7 percent faster for those in their late 20s and older, i.e., with 10 or more years of labor force experience.

- For officers, civilian pay grew somewhat more rapidly for junior versus senior male officers, and less rapidly for junior versus senior female officers.

### 3. Implications for Pay Caps

The estimate of the military/civilian pay gap helps serve as a guide in the military pay setting process. For those who have trusted the ECI-based pay gap estimate, it would be advisable to consider the evidence from the DECI. Far from an overall gap of 11.7 percent in 1992, the DECI places the overall gap at one-tenth of a percent. The likelihood of a one-year military pay freeze seems considerably more tolerable in this context. It would be tempting but wrong, however, to reinforce this point with the observation that because recruiting and retention have not been affected under the high perceived gaps in recent years, a one-year freeze from a starting point of zero gap could not possibly have an effect. The flaw in this approach is that perception is not reality. Whether or not policymakers and military personnel avow their belief in the ECI-based pay gap, enlisted recruiting and retention tell a different story. Enlisted recruit quality and retention actually rose and fell with military/civilian pay as estimated from the DECI. This is because relative pay does matter, and the DECI more accurately measures the civilian wage trends relevant to the accession and retention decisions of military personnel than the ECI. The ECI has only a vague relevance for military personnel and shows a negative relationship with recruit quality and retention. The ECI-based relative pay measure would have one believe that military pay had become an unimportant factor in meeting enlisted personnel quality and quantity goals, but the DECI implies that pay has always been a strong factor.

Based on the DECI, the lesson for pay caps is that because of the sensitivity of enlisted recruit quality and retention to military pay, although a one-year freeze might do little damage, a sustained slippage amounting to perhaps 9 percent by 1997 could do real harm. The problems of the late 1970s are the best testament to this.

The Administration's pay cap proposal was of course motivated by the goal of controlling the growth in federal expenditures and reducing the deficit. The proposal did not target active duty personnel alone but included all federal civil servants, and the inclusion of the military in the pay cap proposal can be seen as a consequence of the fact that since 1967 civil service pay adjustments and military pay adjustments are linked by law. The 1990 Federal Employee's Pay Comparability Act (1990 FEPCA), which supersedes previous legislation linking these pay adjustments, continued that linkage but specifically designated the ECI

as the index on which to base civil service pay adjustments and hence military pay adjustments.<sup>1</sup> Therefore, there may be some question of whether the military pay adjustment can be decoupled from the civil service adjustment, and whether the DECI, a new index even to the defense manpower community, has any standing in this process.

However, Appendix C contains a brief history of military pay adjustment legislation and indicates that waivers have been used to override the military-civil service pay linkage. Also, ample precedents exist for making use of an alternative civilian pay index on the grounds that it is a better reference than the one used for tracking civilian pay trends for federal civil servants. Since approximately 1982, the Department of Defense (DoD), in fact, preferred the ECI to the then “official” civilian wage index, the PATC index. Although it may be awkward for DoD (and Congress) to include the DECI in its pay deliberations along with the ECI, the DECI is new and could not have been referenced before, and it does have focus and capability not possessed by the ECI. In particular, sole reliance on the ECI weakens the case that the proposed pay caps can be expected to have substantial ill effects on recruiting and retention because of the lack of correspondence between the ever-growing ECI-based pay gap and accession/retention rates. Again, ECI-based evidence fosters the notion that the military has been able to cope with a 12 percent pay gap without loss of recruiting quality or retention.

We have emphasized above the potential for adverse manning consequences of sustained pay caps, but the extent of adversity may be mitigated by the post-Cold War drawdown now under way. The manpower drawdown is a shift back in the demand for military personnel. If we assume an upward sloping supply of personnel—which is consistent with past studies showing a relationship between recruit quality and retention on the one hand and military pay, bonuses, and quality of life factors on the other—the demand shift implies a new equilibrium at a lower quantity of personnel and a lower price. In other words, because of the personnel drawdown, the military should be able to meet its manning targets at lower pay. But precisely how much lower pay can be before running into trouble is an open question. Many factors other than pay are changing, and they can impinge on the supply side. These factors include uncertainty about future security risks and in particular the kind and frequency of military engagements; future unexpected separation due to changes in drawdown policies that essentially break the implicit contract between the service member and the

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<sup>1</sup>FEPCA further added a locality pay for federal civilians only, which was specifically intended to keep civilian wages comparable to regional private sector wages.

military; base closures that reduce the opportunity to be based abroad or in certain U.S. cities and towns and that may have implications for military families via local housing, schools, and spouse employment opportunities; the possible emergence of National Service as a source of educational benefits; potential domestic roles for the military; the policy on gays in the military; the likelihood of a reduced or delayed pre-age 62 Cost of Living Allowance (COLA) for military retirees; and improvements in civilian job opportunities as the recession ends.

Another dimension to keep in mind is the advantage of a selective drawdown. Drawdown policy aims at reducing excess supply (relative to the new lower force structure) in particular specialties and grades in keeping with the "vertical" cuts in structure, i.e., eliminating certain units and their support tail. Further, the voluntary separation payments that compensate personnel for their early departure are designed to appeal to personnel with less-than-excellent future career prospects in service. In contrast to this selective approach, military pay reductions are a blunt instrument that can cause personnel outflows where none may be sought. In *any* specialty or grade, there are always people at the margin between leaving and staying, and a pay cut may trigger departures.

For enlisted personnel, reenlistment bonuses and enlistment benefits and bonuses can counteract the indiscriminate effects of pay cuts. Bonuses and benefits are intended to be applied selectively. The earlier summary of fiscal 1992 pay gaps based on the relevant subgroup DECs reveals a wide range of existing gaps, from a positive 7 percent for junior enlisted males to a minus 7 percent for enlisted females (junior and senior). The differential in civilian wage growth among subgroups reflected in this range of pay gaps means that pay caps might be expected to have varying impacts on the corresponding subgroups among military personnel. Bonuses and supplemental educational benefits are a flexible way of coping with this.

Reenlistment bonuses target hard-to-fill specialties and are available to all personnel in those specialties who otherwise qualify for reenlistment (meeting certain minimal quality standards). Enlistment bonuses not only target specialty but are commonly restricted to "high-quality" recruits with a high school education who score in the upper half of the Armed Forces Qualification Test distribution. Educational benefits are available on a cost-sharing basis to all recruits and can be increased by supplements (e.g., Army College Fund) available to high-quality recruits entering selected specialties. The fact that enlistment bonuses and supplemental educational benefits target high-quality personnel is important, because research has shown that high school graduates are more likely to complete their first term, and high-quality personnel are on

average more adept at performing the tasks associated with their specialties. For a strong and versatile, albeit smaller, future force, personnel quality is an essential dimension of capability.<sup>2</sup>

To offset the possible ill effects of military pay caps with bonuses and supplemental educational benefits, the Services must have sufficient and timely funding for them. This will require either increased bonus and benefit appropriations, authority to move appropriated money from other uses or accounts, or both. With respect to enlistments, evidence suggests that educational benefits are less costly than enlistment bonuses for the same recruiting effect, and educational benefits may also be more cost-effective than increases in recruiters or in advertising expenditures.<sup>3</sup> Having the wherewithal to substantially increase these outlays, by 50 or even 100 percent if necessary, to combat the effects of pay caps may be needed, though further work is necessary to determine appropriate amounts. Fortunately, bonus and supplemental educational benefits are relatively small percentages of personnel costs. The need to create a capacity for increasing bonus and benefit outlays should become a feature of the policy debate. By "create a capacity," we mean that DoD should have the authority and funds to expand bonus and benefit outlays on an as-needed basis within a fiscal year, as opposed to the alternative of seeing a problem develop and waiting a year or more until fiscal relief comes. The year adds to the six months or so required to identify a particular problem situation in personnel recruitment or retention.

For officers the situation is less clear. Because of various factors (officers' long-term career commitments, their confidence in the restoration of pay comparability in a matter of time, or the possibility that absolute military compensation has been greater than civilian levels and is declining toward parity), officer retention was little affected by the 15-or-so percent pay gaps that had opened by the late 1980s for male officers with over five YOS. The recession has reduced their gap to 11 percent in 1992. Nevertheless, the size of the gap resulting from the proposed pay caps (potentially on the order of  $11 + 9 = 20$  percent) could exceed the threshold at which the pay gap does begin to offset other factors. In this regard, the reduced present value of retirement benefits from pre-age 62 reduced or delayed COLAs may be a significant negative factor, as could a robust postrecession civilian economy.

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<sup>2</sup>By the same token, resource budgets for the recruiting infrastructure and advertising must be maintained to ensure sufficient high-quality accessions.

<sup>3</sup>Asch and Dertouzos, unpublished RAND research.

Two factors can lessen the potential negative impact of pay caps on officer accession. These are the existence of educational opportunities and benefits via ROTC and the service academies, and the decrease in junior officer accession requirements resulting from the defense drawdown.

Officers do not have fixed terms of service and therefore do not have reenlistment bonuses. Without bonuses as a tool for personnel flow control, in the short run it may be advisable to survey officers regarding their attitudes toward continued service and to conduct pay comparability/employment opportunity studies (if not done recently). This suggestion may acquire urgency if the drawdown makes officers who had planned on completing 20 or more YOS fearful that they will not be permitted to do so.

A final comment concerns the pay gap tilt observed for enlisted personnel. Relative to civilian pay, military pay growth from 1982–1992 has been about 7 percent lower for senior enlisted personnel than for junior enlisted personnel (due largely to the differentials between male senior and junior personnel). This differential has persisted through the recession. We suggest that it would be useful to develop and assess proposals for restructuring enlisted pay to eliminate the tilt. A return to the 1982 junior/senior pay relationship with respect to pay comparability (i.e., equating the relative pay growth between the two groups) would not necessarily be best. A more thoroughgoing deliberation on enlisted pay structure may be in order, one considering the size of pay steps by grade and by year of service. Conceivably, under the smaller force size of the future, basic pay could be structured to create greater incentives for attaining higher grades and, for those who have reached their appropriate grade given their skills and talents, for remaining in service longer within that grade.<sup>4</sup> An assessment of enlisted pay structure should of course also take into account projected changes in future civilian pay by experience/education group.

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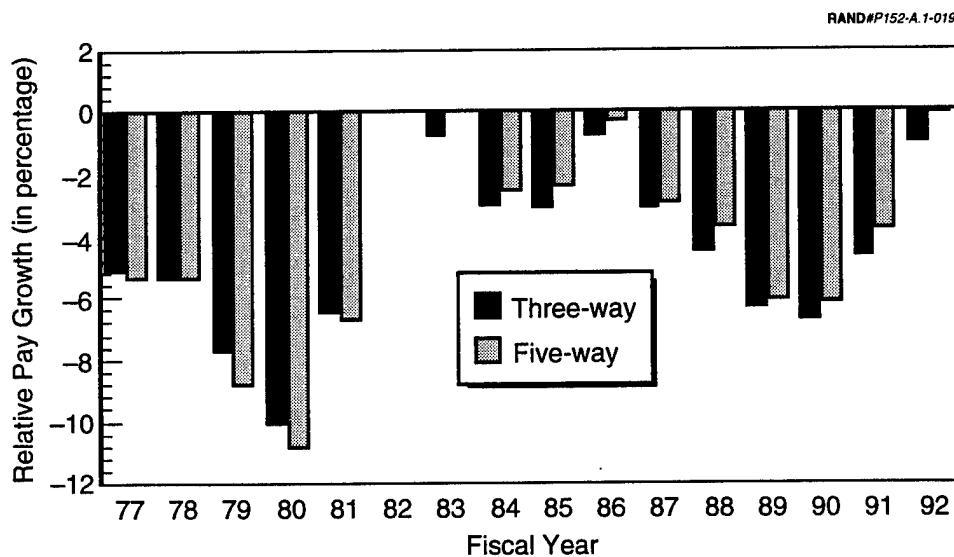
<sup>4</sup>These ideas are expanded in Asch, 1993.

## Appendix

### A. Pay Gap Comparison Between Three-Way and Five-Way DECIs

We have presented military/civilian pay gaps based on "five-way" DECIs, that is, DECIs based on age, education, occupation, gender, and ethnicity. In our earlier report, Hosek et al., 1992, we utilized the three-way DECI based on age, education, and occupation. We use the five-way DECI now so that we can identify wage patterns by gender and ethnicity. As seen in Figures 3 and 4, for instance, there is a significant difference in wage growth between men and women over the past decade. The influence of this difference cannot be adequately described by just the three-way DECI.

The purpose of this appendix is to show that even though the overall pay gap estimated with the five-way DECI differs somewhat from that for the three-way DECI, the differences are minor. This can be seen in Figure A.1, comparing the overall pay gaps based on the five-way and three-way DECIs. Notice that in most years, the gaps differ by a percentage point or less. As a result, both DECIs



NOTE: Relative pay growth =  $\{[(BPI - DECI)/BPI] \times 100\}$ .

Figure A.1—Pay Gap Similarity Between Three-Way and Five-Way DECIs

reveal a gap reaching about 6 percent in 1989–1990 but narrowing to 1 percent or less in 1992. The main reason for this similarity—despite the sex differences shown in Figures 3–6—is that there are relatively few women in the active duty force, so their larger pay gaps contribute little to the overall military/civilian pay gap.

## B. Correspondence Between Military/Civilian Pay Ratios and Enlisted Recruit Quality and Retention

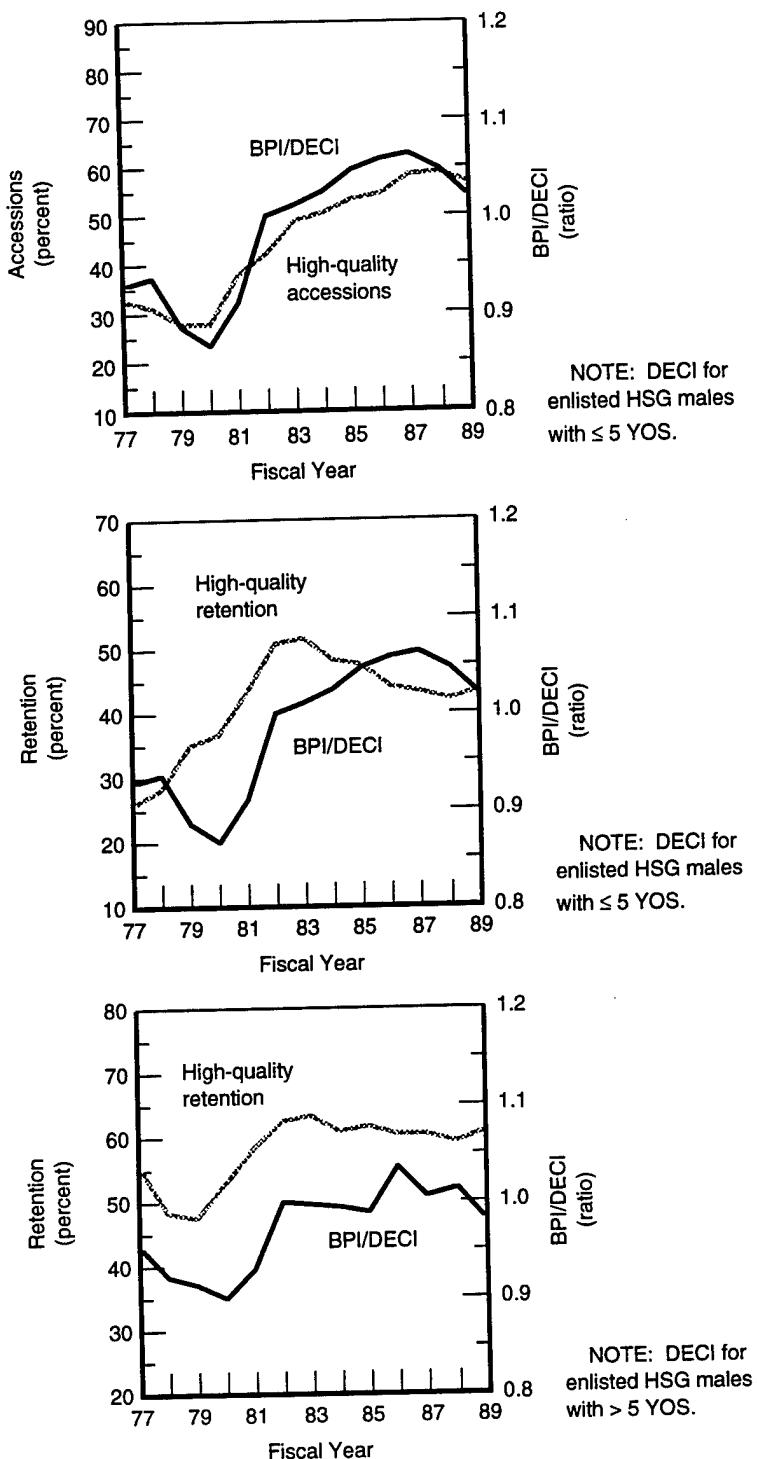
Figure B.1 illustrates the similarity between trends in relative pay and enlisted recruit quality and retention. Relative pay is the BPI divided by the subgroup DECI that most closely matches the accession/retention populations used: enlisted high school graduate (HSG) males with five or less YOS for accessions and first-term retention, and enlisted HSG males with more than five YOS for second-term retention. For recruit quality, we use the percentage of accessions that were "high quality" (AFQT I-IIIA and HSG); for retention, we use the retention rate for high-quality personnel similarly defined. Previously we found that the relationships between pay and accessions/retention were strong for enlisted men, who make up 88 percent of enlisted personnel. Relationships for enlisted women and for officers were weak and are not shown here (but see Hosek et al., 1992). Also, retention rates for non-high quality male enlisted personnel are not shown, but their correspondence with military/civilian pay is similar to that for high-quality personnel.

The graphs in Figure B.1 are illustrative and do not represent a formal model of accession quality or retention. Factors other than relative pay affect the enlistment decisions of young men, in particular, educational expectations, attachment to the labor market, and service recruiting policies. Thus, one will not see a perfect match between relative pay and high-quality accession trends. However, the general similarity of the DECI-based relative pay trend to that of accessions provides evidence supporting the influence of relative pay on the recruiting successes of the 1980s.<sup>1</sup> Likewise, relative pay is obviously not the only factor affecting retention. Some disparities between pay ratio and retention trends exist because of changes in the Services' retention policies resulting from shifts in manning requirements over time. For example, first-term retention as well as that of junior grade officers was low in the mid-1970s following the Vietnam reduction. Retention of career personnel (second term

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<sup>1</sup>Simple regressions of the BPI/ECI and BPI/DECI pay ratios on male high-quality accessions and retention show that the DECI-based ratio has a significant and positive effect on both accessions and retention, while the ECI-based ratio has a negative coefficient and an insignificant effect. Presentation of these regression results appears in Hosek et al., 1992. Tables 4.1 and 4.2 of that report present the simple regressions associated with Figure B.1.

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**Figure B.1—Male High-Quality Accessions and First- and Second-Term Retention Track the DECI-Based Military/Civilian Pay Ratio**

and higher) fell at the end of the 1970s, affected in part by the decline in relative pay. The subsequent rise in retention in the early 1980s was spurred by several factors: the pay catch-up, an expansion and increase in reenlistment bonuses in the early 1980s, and sharply rising unemployment in 1982. However, as seen in Figure B.1, the processes are complex, since while the retention of high-quality career personnel fell in the late 1970s and rose again in the 1980s, the retention of high-quality junior personnel rose during the late 1970s and continued into the 1980s. For junior personnel, the initial rise in high-quality retention was being fostered by factors other than pay; its continued rise was supported by improved pay factors in the 1980s.

## C. Military-Civil Service Pay Adjustment Linkage: Legislative Background, 1967–1993

Civilian wage growth enters formally into deliberations over the annual adjustment in military pay. In this context, military pay includes basic pay, basic allowance for quarters (BAQ), basic allowance for subsistence (BAS), and the implicit tax advantage deriving from the nontaxability of BAS and BAQ. This definition of military pay is called Regular Military Compensation (RMC). The recent history of legislation affecting military pay increases begins in 1967.<sup>1</sup> Public Law 90-207 (1967) required that the "comparable increase" between civilian and military pay raises be determined by equating the RMC increase (apart from the tax advantage) to the federal civil service General Schedule (GS) increase.<sup>2</sup> At the same time, the Federal Salary Act of 1967 required increases in GS salaries to close the gap between federal civilian and private sector pays. This act, together with PL 90-207, resulted in a military-civilian pay *adjustment linkage*. The Federal Pay Comparability Act of 1970 required that GS rates be measured annually against rates of pay for the same levels of work in private enterprise and that federal compensation be adjusted annually by the percentage necessary to maintain comparability. These *automatic adjustment* provisions together with PL 90-207 resulted in a systematic procedure for increasing basic pay and, as of 1974, RMC (see footnote 2). In practice, the civilian wage index used for tracking civilian wage increases was the Professional, Administrative, Technical, and Clerical (PATC) index.

Despite the existence of this military pay adjustment procedure, by 1980 serious manning problems had developed and many people felt that military pay had lagged behind civilian wages. Under the presumption that the comparability basis under which GS wages were adjusted might have limited applicability to military pay, PL 96-342 (1980) suspended the linkage to the GS adjustment and instead stipulated an 11.7 percent overall increase effective fiscal 1981. Also, the

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<sup>1</sup>Information on pay legislation through 1991 comes from *Military Compensation Background Papers*, 1991, pp. 27–40. Descriptions of the law in this appendix paraphrase that source.

<sup>2</sup>Initially, the whole of the RMC increase had to be embodied in the basic pay increase, but later legislation (PL 93-419, 1974), codified as 37 USC 1009, mandated that all three cash elements of RMC were to be increased by the same percentage as the GS increase. Subsequent legislation gave the President some discretion in making the allocation (PL 94-361, 1977). *Ibid.*, pp. 29ff.

President was given authority to grant disproportionately greater increases in pay to "career" members. This was followed by a 14.3 percent increase in RMC under PL 97-60 (1981), effective fiscal 1982. By this action, Congress sought to return military pay to where it stood relative to private sector pay in 1972, just prior to the all-volunteer force. In particular, Congress decided that this additional large increase was necessary to reach acceptable quality and retention levels. Further, Congress, especially the Senate, noted that it was convinced that the existing comparability indexes were defective and a new adjustment mechanism should be developed, one "appropriately weighted to reflect the military skill mix."<sup>3</sup>

Around that time the armed services and the Senate Armed Services Committee (SASC) began tracking civilian wage movements with the Employment Cost Index. The ECI included blue collar as well as white collar workers, whereas the PATC focused on white collar workers, because they seemed suitable for GS employees. In 1982, the Senate recommended that the link between military pay and civil service wages be cut and that an appropriate index for military pay be developed. Although the link was not cut, from 1982 onward the annual military pay legislation suspended 37 USC 1009; this provision called for equal percentage increases in all three cash components of RMC, *with the percentage equal to the GS increase*. The effect of this series of suspensions was to unlink military pay from GS increases, albeit on a year-to-year basis and without ever overturning the linking provision itself. Evidence that unlinking was the objective, as opposed to seeking relief from implementing equal percentage increases in basic pay, BAQ, and BAS, exists in the actual pattern of their increases. Since 1980, all three of these components of RMC have been changed by the same percentage each year, with the sole exception being the BAQ increase in 1989 (7.0 percent versus 4.1 percent for basic pay and BAS).

By the end of the 1980s, the House Armed Services Committee (HASC) and the SASC both recognized that restoring pay comparability with the private sector had been "critical to the dramatic turn-around in recruitment and retention experienced since that time."<sup>4</sup> Like the Services, the HASC and SASC remained skeptical about the applicability of the PATC as a basis for adjusting military pay and were openly showing preference for the ECI.<sup>5</sup> At the same time, because of growing doubt about the PATC's relevance to the current GS work force, the

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<sup>3</sup>Ibid., p. 32.

<sup>4</sup>Ibid., p. 36.

<sup>5</sup>"Using this [ECI] measure, the gap between military and private sector pay has grown from relative comparability in 1981 to 11 percent [in 1989]. This gap is of concern to the Committee." SASC report quoted ibid., p. 39.

1990 Federal Employee Pay Comparability Act *mandated* the use of the ECI for adjusting GS pay beginning with fiscal 1992.<sup>6</sup> Thus, the index preferred to the PATC, the ECI, has legally become the reference index, and although the automatic adjustment linkage between military pay and GS remains, for over a decade it has been honored in the breach. That is, the linkage assures Congress and the armed services of having a “benchmark” increase amount, whereas a decade of suspending 37 USC 1009 offers ample precedence for overriding the linkage.<sup>7</sup>

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<sup>6</sup>GS basic pay is to change in accord with the ECI minus one-half percentage point, the latter to allow for locality-specific pay adjustments. The 7th Quadrennial Review of Military Compensation has pointed out that the language linking military pay to GS increases must be modified to avoid the half-point loss.

<sup>7</sup>Within this context, the DECI could play the role vacated by the ECI. It could serve as a supplemental index for guiding exceptions to the strict linkage.

## Bibliography

*Army Times*, April 5, 1993, p. 3.

Asch, Beth J., *Designing Military Pay: Contributions and Implications from the Economics Literature*, MR-161-FMP, RAND, 1993.

Asch, Beth J. and James N. Dertouzos, unpublished RAND research on educational benefits versus bonuses in a comparison of recruiting options.

Hosek, James R., Christine E. Peterson, Jeannette Van Winkle, and Hui Wang, *A Civilian Wage Index for Defense Manpower*, R-4190-FMP, RAND, 1992.

*Military Compensation Background Papers*, Fourth Edition, November 1991.

Smith, James P., and Michael Ward, "Women in the Labor Market and in the Family," *Journal of Economic Perspectives*, Vol. 3, No. 1, Winter 1989.